### DEPARTMENT OF NATURAL RESOURCES

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January 14, 2002

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Ms. Pamela Thompson, Project Manager United States Department of Energy Weldon Spring Site Remedial Action Project Office 7295 Highway 94 South St. Charles, MO 63304

Subject: Weldon Spring Site Second Five-Year Review Rev. 0 August 2001

Dear Ms. Thompson:

This office has examined the Department of Energy's (DOE) "Second Five-Year Review". The Five-Year Review is mandated by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and intended to ensure, among other things, that DOE's remedial actions, which have residual contamination left on site, remain protective after cleanup. We have paid particular attention to this five-year review, because, as the first review following completion of cleanup of a portion of the Weldon Spring site, it could establish a precedent for subsequent Five-Year Review methodology. The department notes this document, though commonly referred to as a "five-year review" is actually a "periodic" review to be conducted at intervals of five years or less. EPA's guidance recognizes and provides for the possibility of more frequent reviews, if such seems prudent. It is also noted that EPA has identified such periodic reviews as a Primary CERCLA document.

The department again applauds you and your staff for your award-winning accomplishments during the cleanup process at portions of the Weldon Spring Site – the Chemical Plant, where cleanup is now being finalized and the Groundwater Operable Unit which is nearing completion of the pilot study and Interim Record of Decision (ROD) implementation. Also, the quarry, for which the bulk waste ROD was signed in 1990, with the major field work completed in 1995, and Quarry Residuals which is nearing completion of the interceptor trench study to address groundwater and backfilling of the quarry proper. The protectiveness of the cleanup must be reviewed at least every five years after cleanup operations begin at a site where contamination remains.

Given that the Weldon Spring waste cleanup is designed to remain effective for hundreds of years, for contamination expected to remain radioactive for thousands of years, it should <u>not</u> be remarkable that DOE's review found the remedy to be "protective" only six years after completion of the bulk waste operable unit and nearing completion of the remaining operable units. Moreover, it is not surprising the department does not disagree with the "protectiveness determinations" made by DOE. However, we are deeply concerned about the technical methodology DOE used in carrying out the five-year review, which is a critical element of the

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long-term stewardship program. The DOE's technical methodology for five-year reviews is important independent of the "protectiveness determination" because of the potential for creating a precedent for how future five-year reviews are conducted at the site when the continued protectiveness is less certain. Without sufficient technical rigor, the confidence in the findings of the five-year site reviews will be severely undermined.

The department submitted significant concerns regarding the DOE's plans for long-term stewardship in September and November. These new concerns about the technical rigor of the five-year review exactly validates the concerns we raised at that time about DOE's ability and commitment to carry out an adequate long-term stewardship program. The DOE's Second Five-Year Review is an inauspicious beginning to its attempt to develop a credible long-term stewardship program.

There are serious shortcomings that must be corrected before the review can be considered adequate. The department's comments are attached as part of this letter. Generally, the inadequacies in DOE's Five-Year Review include:

- Failure to recognize legal requirements and authorities (e.g. EPA guidance);
- Overall lack of technical detail;
- Missing complete sections and topics that need to be covered.
- No evidence of community involvement

Based on these concerns, issues, and comments, DOE should prepare a revised document along with public notice, opportunity for interested party participation, and availability of information (e.g., detailed site maps). As noted in my letter of October 9, 2001, the five-year reviews are one of the cornerstones of effective long-term stewardship plans. The scope and process of this five-year review will likely serve as the model for future reviews. We are certain all parties involved with this process will want to have the best possible product for future stewards.

Considering the significance of this review and process, we want to offer our assistance in developing responses to the attached comments, or alternatively, to meet with you and your staff to discuss resolution to the differences between the current review document and the document envisioned in the EPA guidance. Due to the importance of this document and the concerns/issues that we have noted, a response, which addresses the concerns and a plan to include public involvement, is requested by February 15, 2002. If you have any questions or need clarification, please contact me at (573) 751-6838.

Sincerely,

Hazardous Waste Program

Original signed by Larry Erickson, P.E.

Larry Erickson P.E., DOE Unit Chief Federal Facilities Section

LE:vp

c: Dan Wall, EPA VII Weldon Spring Citizens Commission

Enclosure

# MISSOURI DEPARTMENT OF NATURAL RESOURCES COMMENTS ON THE WELDON SPRING SITE REMEDIAL ACTION PROJECT SECOND FIVE-YEAR REVIEW REV. 0 AUGUST 2001.

These comments support the letter addressed to Pam Thomson, the Department of Energy (DOE) Project Manager of the Weldon Spring Site Remedial Action Project (WSSRAP) in St. Charles County, Missouri. The DOE's "Five-Year Review" for the WSSRAP is legally required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) because residual radioactive and chemical contamination will be left on site after completion of remedial actions, or "cleanup." Periodic reviews at frequencies no greater than five years are intended to ensure, among other things, that DOE's remedial actions remain protective. With the imminent (2002 or 2003) completion of the major construction phase of the cleanup at Weldon Spring, the Department of Natural Resources has given particular attention to this Five-Year Review, as it is the first review following completion of cleanup of a portion of the Weldon Spring Site, it may establish a precedent for how subsequent five-year reviews will be conducted.

We find the *Second Five-Year Review* does not meet the requirements for a complete five-year review when evaluated by criteria established in the Environmental Protection Agency's (EPA's) *Comprehensive Five-Year Review Guidance (OSWER No. 9355.7-03B-P)*. Our examination indicates that DOE's Five-Year Review:

- Fails to recognize legal requirements and authorities,
- Overall lack of technical detail.
- Missing complete sections and topics that need to be covered, and
- No evidence of community involvement.

The EPA guidance<sup>1</sup> clearly intends for the Five-Year Review report to be a stand-alone document. From this perspective, the DOE *Weldon Spring Site Remedial Action Project Second Five-Year Review*, in many instances, appears to misinterpret the EPA guidance, has a lack of detail, or is missing required sections altogether. The document does not meet the requirements for a complete five-year review. The DOE's Second Five-Year Review for the Weldon Spring Site was completed after finalization of the EPA Comprehensive Five-Year Review Guidance. DOE's Five-Year Review should have complied with the final guidance, which was largely unchanged from the draft versions of the guidance available for years prior to the final version.

#### A. DOE's Five Year Review Fails to Recognize Legal Requirements and Authorities

1. The DOE's legal requirement to conduct five-year reviews at the Weldon Spring Site, among others, was delegated by Executive Order 12580 from the statutory mandate in CERCLA Section 121(c). DOE's Five-Year Review is a critical element of an effective long-term stewardship program at the Weldon Spring Site. It is required to ensure continued protection of human health and the environment ,and as such, is an integral part of the removal and

<sup>&</sup>lt;sup>1</sup> EPA, *Comprehensive Five-Year Review Guidance*, OSWER Directive 9355.7-03B-P, EPA 540-R-01-007, June 2001.

remedial actions identified by the Records of Decision (RODs) and/or final decision documents. The selected remedial and removal actions would not continue to operate effectively without an adequate five-year review process and certainly would not have been acceptable to regulators. Consequently, all of the state and EPA regulatory authorities and responsibilities for oversight, review, and concurrence, which have existed during the remedial action selection and implementation process, remain in effect during planning and implementation of the long-term stewardship program phase of the remedial action.

- 2. This department is mandated by statute and regulation to participate in the long-term planning process for all remedial sites within the state. We are to be given a reasonable opportunity to review and comment on technical data and reports relating to implementation of the remedy and concur before a site can be deleted from the National Priorities List.<sup>2</sup> The department's responsibility to provide independent oversight, review, and comment on the Five-Year Review report is among its more important roles for ensuring long-term protection of human health and the environment.
- 3. This office conducted its review in accordance with the EPA's Comprehensive Five-Year Review Guidance, including Appendix E, to check completeness. The guidance provides an essential roadmap to ensure minimal technical adequacy of five-year reviews. DOE's failure to follow the EPA guidance is inappropriate, and possibly in conflict with 40 CFR 120 (a)(2), which requires the use of EPA guidance for Federal Facilities. Without adherence to this guidance, the five-year review process, and the whole long-term stewardship process, would be subject to the whims, competing pressures of individuals (e.g., to complete work and find another job) and organizations with various missions to pursue (e.g., supporting the nuclear weapons stockpile). Moreover, the department strongly supports EPA's directive that CERCLA-related documents incorporate effective institutional controls.<sup>3</sup> The DOE Five-Year Review fails to consider and adhere adequately to these guidance documents.
- 4. The department is seriously concerned with DOE's failure to follow EPA's guidance for preparing Five-Year Reviews, beginning with DOE's failure to explicitly establish the basic legal requirements and authorities under which it is operating. This omission might not merit comment, except that the review is woefully inadequate in following any rigorous framework for ensuring technical adequacy of the review, which sets an unacceptable and disturbing precedent for future five-year reviews. Moreover, the fundamental inadequacies of DOE's Five-Year Review stands in stark contrast to the assertion by DOE's Washington, D.C., office that "[w]e should continue to use the ["regulatory framework established by CERCLA"] to define the work during the last year of the project and for post-remediation care of the site." Instead, DOE appears to ignore the applicable guidance for a principle element of post-remediation care: CERCLA five-year reviews. Presumably this was included as part of the "framework established by CERCLA" referred to by DOE Headquarters, unless DOE actually intends to pick and choose what portions of CERCLA to

EPA Headquarters Memorandum to EPA Regional Offices, Memo from Jim Woolford and Craig Hooks, EPA Concurrence/Approval of Federal Facility Proposed Plans and RODs and other Documents, August 17, 2001.

See e.g., CERCLA Section 121(f)

<sup>&</sup>lt;sup>4</sup> Letter from Jessie Roberson, DOE, to Stephen H. Mahfood, Director Missouri Department of Natural Resources, November 20, 2001.

abide by in its actions. Clearly, the only rational explanation for actions so dramatically at odds with DOE's assertion are either (a) the DOE Headquarters position was not transmitted to WSSRAP personnel, or (b) it was transmitted but not heeded. Pursuant to the department's mandate to protect human health and the environment in Missouri – for which the department has no competing mandates – we are compelled to pay attention to DOE's actions rather than merely its words. DOE's actions have been to ignore rather than comply with CERCLA requirements concerning the Second Five-Year Review for the WSSRAP.

- 5. Perhaps the most basic inadequacy of DOE's Five-Year Review is the failure to indicate under what specific authority it was preparing the Five-Year Review. There are two options identified in EPA's CERCLA guidance: (a) a policy or (b) a statutory five-year review. The consequence of DOE's failure to identify the basis for conducting the review is (1) the basis and associated framework for conducting reviews, such as the trigger date for conducting reviews are muddled, and (2) public understanding of process is further diminished.
- 6. This office believes that the Weldon Spring Site Five-year Review should be conducted as a statutory five-year review because the ROD was signed and the remedial action (e.g., on-site mobilization by the contractor) began after the Superfund Amendments and Reauthorization Act was signed in October 1986. DOE should identify a basis and associated framework for the Five-Year Review in the revised document. However, prior to submitting a revised document, we urge DOE to contact regulators for additional guidance on CERCLA Five-Year Review procedures.

#### B. DOE's Five Year Review Lacks Technical Details

Regardless of the framework for the five-year review, it should contain at least a minimum amount of technical and other detail to provide for peer review and transparency for regulator and public review.

DOE's Five-Year Review lacks adequate technical detail in all of the following areas:

- Introduction,
- Site background,
- Description of remedial actions,
- Description of progress,
- Description of process, and
- Technical assessment.
- 1. The introduction is lacking the following components:
  - A list of organizations that provided analyses in support of the review.
     It is important for DOE to identify which contractors and subcontractors contributed technical analyses to the Five-Year Review. The guidance and this office believe it is important to identify the technical ability of all involved with preparation of the review.
  - Other review participants or support agencies.
     Considering the level of public attention that the WSSRAP has received during the last year, particularly concerning the groundwater, this office is concerned by the

- DOE's failure to include state and public groups as review participants during the report development process.
- Number, description, and status of all operable units at the site. Although there is a listing of the operable units that compromise the WSSRAP, there is no mention of each operable unit's status. The status is crucial to determining the protectiveness statement for each decision document. Additionally the *Record of Decision for Remedial Action at the Chemical Plant Area of the Weldon Spring Site, September 1993*, in Section 4 on page 14, explicitly excludes the Southeast Drainage from the Chemical Plant ROD. Though the Southeast Drainage is not technically an operable unit in and of itself, this office believes the EPA intended each remedy with a separate decision document be addressed in this manner. This interpretation would include the Southeast Drainage.
- 2. The site background is lacking the following components:
  - Description of site geology.
    - The site geology needs to be described in detail in this and future five-year reviews. The disposal cell is situated on 'karst like' bedrock and future readers need to be aware of the possible affects that this setting may have on site safety, cell performance, and other potential impacts.
  - Basis for taking remedial action.
    The report mentions several Contaminants of Concern (COC), but not all. A list is
    needed of not only all of the COCs, but should include data on the extent and quantity
    of contamination originally present. (e.g., what were the maximum levels of each
    COC found, total quantity of contaminants, etc.).
- 3. The description of the remedial actions are lacking the following components:
  - Description of remedy performance.

    There needs to be a brief summary of the confirmation data to detail the effectiveness of the remedial and/ or removal action. Although this information is included, in detail, in the referenced close out reports, a summary in the Five-Year Review is appropriate.
  - Statement of remedial action objectives.
     There needs to be a brief summary of the remedial action objectives to provide sufficient data for evaluation of the remedy performance. Though this information is included, in detail, in the referenced close out reports, a summary in the five-year review is appropriate.
  - Descriptions of operations and maintenance effectiveness, if applicable.
- 4. There is no description of progress since the last Five-Year Review, which should include at a minimum:
  - Protectiveness statements from the last review.
     These need to be included for reference and completeness.
  - Status of recommendations and follow-up actions from the last review. Without including recommendations and follow-up actions from the last review, it is impossible to gauge the DOE's responsiveness to site conditions, the general public, and other agencies.

- Results of implemented actions, including whether they achieved the intended effect. These conclusions will be supported by the inclusion of more detailed data within the description of the remedial actions.
- Status of any other prior issues.

  Should there be any unresolved issues left from the previous five-year report an extensive explanation is warranted.
- 5. There is no description of the five-year review process followed in preparation of the report, which should include, at a minimum:
  - Site inspections, including, at a minimum, the date, participants, scope, procedures, results, and conclusions.
    - How did the DOE ensure that the decision document exposure pathways are valid without making a site inspection? Presumably this inspection or inspections were conducted but this is not apparent from the document.
  - Identification of Five-Year Review team members.

    This information should have been provided at the beginning of the review process so that potentially interested parties would have the opportunity to comment on and possibly make suggestions to the team.
  - Outline of components and schedule of five-year review process.
     A well-defined timeline is needed and if it had been available at the start of the review process would have helped potentially interested parties to coordinate their activities.
  - Community notification, both prior and post review.
     Again, this office is not aware of any public notification (see additional public involvement issues below).
- 6. There is no technical assessment. An assessment should be added, which includes, at a minimum:
  - 6.1 For Question A: Is the remedy functioning as intended by the decision documents?
    - Remedial action performance,
    - Cost of system operations,
    - Opportunities for optimization,
    - Early indicators of potential issues, and
    - Implementation of institutional controls and other measures.
  - 6.2 For Question B: Are the exposure assumptions, toxicity data, cleanup levels, and the remedial action objectives used at the time of the remedy selection still valid?
    - Changes in standards or newly promulgated standards,
    - Expected progress towards meeting the remedial action objectives,
    - Changes in exposure pathways,
    - Changes in land use.
    - New contaminants and/or contaminant sources,
    - Remedy byproducts,
    - Changes in toxicity and other contaminant characteristics, and
    - Risk recalculation/assessment.

- 6.3 For Question C: Has any other information come to light that could call into question the protectiveness of the remedy?
  - New or previously unidentified ecological risks,
  - Natural disaster impacts, and
  - Any other information that could call into question the protectiveness of the remedy.
- In fact, significant new information has come to light regarding DOE's handling of 6.3.1 plutonium-contaminated material and the chemical behavior of plutonium in the environment – neither of which was addressed by DOE in its latest Five-Year Review. Perhaps the most outstanding issue under this category, which DOE's Five-Year Review failed to mention, much less address with adequate technical detail, was the extraordinary revelations concerning the use of "recycled uranium material" contaminated with transuranic isotopes. This plutonium-contaminated material was circulated to several DOE facilities, including the Weldon Spring plant. The initial locos of this concern regarding contaminated material, was the Paducah Plant in Kentucky. But, it later became a national focus and concern, involving dozens of DOE facilities, Congressional hearings, and historic enactment of bipartisan legislation to deal with the potential health effects of exposure to contaminated materials at DOE facilities. DOE's internal selfreview concluded, although plutonium contaminated material was shipped to Weldon Spring, there was not a significant risk of contamination that would change the planned remedial action. Nonetheless, it is exactly this type of information that was envisioned in the Five-Year Review guidance to allow future stakeholders to be on the lookout for otherwise unexpected contamination (e.g., plutonium, technetium and other fission products).
- 6.3.2 In addition, during the last five years, a significant amount of new research has been published in the open scientific literature about plutonium transport and detection in the environment, including groundwater and vadose zones.<sup>5</sup> The DOE itself characterized the understanding of "colloidal transport [as] relatively immature" and cited analysis<sup>6</sup> that recommended "additional experimental and modeling studies to enhance understanding of this phenomenon." DOE's Five-Year Review should have addressed the potential implications of this new research at Weldon Spring.
- 6.3.3 It is not apparent how the DOE can make protectiveness statements based solely on the data provided within the Second Five-Year Review. The data provided is certainly adequate for the data review specified in the EPA guidance, but not for the technical assessment. There are other potential issues that should have been covered by DOE in its Five-Year Review, but the department will refrain from commenting on this issue until such a time as the DOE provides a revised document.

See e.g., Loyeland, S. M., Asbury, S. P. Lamont, and S. B. Clark, "Plutonium Partitioning to Colloidal and Particulate Matter in an Acidic, Sandy Sediment: Implications for Remediation Alternatives and Plutonium Migration", *Environmental Science and Technology*, Volume 35, Issue 11, June 1, 2001.

<sup>&</sup>lt;sup>6</sup> Honeyman, B.D., "Colloidal Culprits in Contamination", *Nature*, Vol. 239, p. 33, 1999.

<sup>&</sup>lt;sup>7</sup> Adams, J.P. and Carboneau, M.L., National Low-Level Radioactive Waste Management Program Radionuclide Report Series: Volume 17: Plutonium 239. DOE/LLW-251, March 1999.

## C. DOE's Five-Year Review is Missing Complete Sections and Topics That Need to be Covered

- 1. There is no identification of issues, which should include at a minimum:
  - Issues identified during the technical assessment and other five-year review activities. Without technical assessment, site inspection, or interviews, how can DOE ascertain whether or not there are any actual or perceived problems?
  - Determination of whether issues have arisen that might affect current or future protectiveness.
    - It is not apparent how the DOE can assess any issues, which might affect current or future protectiveness as no issues were identified.
  - A discussion of unresolved issues raised by support agencies and the community.
    There are many unresolved issues in this category, which DOE did not include in the
    Five-Year Review. Institutional controls, long term monitoring and maintenance,
    secure funding, and a groundwater ROD are the most pressing of these issues as
    closure approaches.
- 2. There is no identification of recommendations and follow-up actions to resolve noted issues, which should include at a minimum:
  - Required/suggested improvements to identified issues or to current site operations.
  - Note parties responsible for action.
  - Note agency with oversight authority.
  - Schedule for completion of actions related to resolution of issues.

Since DOE did not provide an opportunity for interested parties to voice their concern or identify issues this office will refrain from commenting on the lack of other possible unidentified follow up actions at this time.

- 3. There is no identification of when the next five-year review will be done. The EPA guidance requires (Section 1.3 at page 1-4 to 1-5, based on 40 CFR 300.430(f)(4)(2)) a statutory five-year review five years from "initiation of the first remedial action that leaves hazardous substances, pollutants or contaminants on site above levels that allow for unlimited use and unrestricted exposure." Subsequent five-year reviews are to be completed no less often than five-year intervals from the date of the previous review.
- 4. DOE apparently misinterpreted the Five-year Review Guidance in relation to the protectiveness statements for the Southeast Drainage and the Groundwater Operable Unit. This office also believes DOE has not adequately considered the implication of institutional controls in the protectiveness statements for the Chemical Plant Operable Unit and the Quarry Residual Operable Unit.
- 5. Within the protectiveness statement for the Chemical Plant Operable Unit, there is a separate paragraph, and protectiveness statement, for the Southeast Drainage. The *Record of Decision for Remedial Action at the Chemical Plant Area of the Weldon Spring*

Site, September 1993 in Section 4 on page 14 explicitly excludes the Southeast Drainage from the Chemical Plant ROD. The Southeast Drainage should have its own heading within Section 7 of the Second Five-Year Review. EPA's guidance (Section 4.1.2 on page 4-3) requires institutional controls and other measures be in place and functioning properly upon completion of a remedial and/or removal action. The removal action in the Southeast Drainage was completed in 1999, as detailed in the Southeast Drainage Closeout Report: Vicinity Properties DA4 and MDC7, but to our knowledge there are no institutional controls currently in place. The answers to the three questions A, B, and C, as outlined in Section 4.0 on page 4-1 in EPA's guidance, which are used to assess protectiveness are No, Yes, and No, respectively, because of the lack of institutional controls. The protectiveness statement, therefore, should be consistent with Exhibit 4-5, part 3, Completed Remedies on page 4-19 of EPA's guidance. The DOE's protectiveness statement should be revised, and comparable to: "The remedy is currently protective as there is no evidence of usage outside of the exposure pathways outlined in the Engineering Evaluation/Cost Analysis for the Proposed Removal Action at the Southeast Drainage near the Weldon Spring Site, Weldon Spring, Missouri, but institutional controls should be in place to ensure long term protectiveness." However, it should be noted this office is not aware of, and DOE provided no documentation of, a site inspection to look for evidence of inappropriate usage, and DOE did not identify the lack of institutional controls. Perhaps a more appropriate protectiveness statement could be comparable to: "The remedy is not complete at this time and will not be until institutional controls and other means are in place and functioning as intended."

6. The DOE references the interim ROD for the treatment of trichloroethylene (TCE) in the Groundwater Operable Unit's protectiveness statement. As no remedial action has been initiated yet, based upon the EPA's guidance (Section 4.5.1 on page 4-21), it is inappropriate for the DOE to issue a protectiveness statement, other than more data is needed, for the groundwater operable unit at this time. Based upon this office's past experience it is expected that DOE's preferred remedy to the Groundwater Operable Unit may be Monitored Natural Attenuation. If that is the case, the department will expect the Groundwater Operable Unit's ROD to include extensive institutional controls and passive remediation at appropriate locations.

#### D. DOE's Five-year Review Provides No Evidence of Community Involvement

Community involvement is a critical element of an adequate Five-Year Review. Community involvement should have been relatively easy for DOE to accomplish, given the existence of a full-time state oversight office and the Weldon Spring Citizens' Commission (WSCC). This involvement will only become more difficult in the future, if awareness of the site fades from public consciousness, and the WSCC ceases activity or its members move on to other community issues. Regrettably, DOE did not take advantage of this existing network of regulator and community participation. Ideally, other stakeholders should have been given an opportunity to be involved as well. This office has identified a number of inadequacies and missing elements in DOE's community involvement activities, including:

• Notification of potentially interested parties of initiation of review process. This office again stresses our concern for the apparent exclusion of potentially interested parties from

- the review process. The exclusion is inappropriate. This office and all other potentially interested parties need to be given an opportunity to be involved.
- Other community involvement activities.
   Had the DOE notified the general public, a response might have warranted a public meeting. We urge DOE to undertake this public notification requirement of the five-year review process prior to re-initiating the review process.
- Site inspection, including, at a minimum, the date, participants, scope, procedures, results, and conclusions. How did the DOE ensure that the decision document exposure pathways are valid without making a site inspection(s)? Presumably this inspection or inspections were conducted but this is not apparent from the document. Other interested parties should have been given an opportunity to participate also.
- Stakeholder and interested party interviews including, at a minimum, date, location, participants, documentation, and summary.
- Several issues have arisen in the last five years that should be included and addressed by the Five-Year Review. These issues include, but are not limited to:
  - The concerns about infant mortality expressed by the Immaculate Conception Church of Dardenne's Social Concerns Committee.
  - The concern about contamination in spring 6306 expressed by near-by members of the general public and any exposure pathway implications.
  - Transuranic and recycled material concerns generated by information released since the last five-year review.
  - The DOE's order 5400.5 initiated, environmentally triggered, occurrence reports with the exception of settable solids violations.
  - The apparent lack of constructive progress in identifying and beginning to implement effective institutional controls for the Chemical Plant Operable Unit, the Quarry Residual Operable Unit, and the Southeast Drainage removal action.
  - The concerns raised by the public about the possibility of undocumented materials that had been stored and or buried at Busch Wildlife.
  - The department's and the public's concerns about the proposed Groundwater Operable Unit ROD and subsequent redirection.